Application No: 10/779,963

AMENDMENTS TO THE CLAIMS

A detailed listing of all claims that are, or were, in the present application, irrespective of whether the claim(s) remains under examination in the application are presented below. The claims are presented in ascending order and each includes one status identifier. Those claims not cancelled or withdrawn but amended by the current amendment utilize the following notations for amendment: 1. deleted matter is shown by strikethrough for six or more characters and double brackets for five or less characters; and 2. added matter is shown by underlining.

1. (Currently Amended) A display device for generating an image perceivable by a viewer as being superimposed on an object located in an object plane, said device comprising:

an image generating device for generating the image in an image plane and a superimposing unit, the image generating device and the superimposing unit being mounted on a head wearable support device, and the image generating device comprising a variable focusing unit by which the distance from the image plane to the support device is adjustable, the variable focusing ~~device~~ unit comprising a lens having a variable refractive index and a control unit for adjusting the refractive index of the lens, the superimposing unit comprising a first beam splitter and a second beam splitter and lacking a retroreflector that receives light that is transmitted through the first or second beam splitter and reflects it back to the first or second beam splitter through which it was transmitted, wherein, when the support device is worn on the head of the viewer, the superimposing unit superimposes the generated image in a field of view including [[on]] the object as seen by the viewer and the control unit adjusts the refractive index of the lens such that the object plane coincides with the image plane.

2. (Original) The display device as claimed in Claim 1, further comprising a measurement module operably connected to the support device, said measurement module detecting a distance

from the object plane to the support device, and wherein the refractive index of the lens is adjusted as a function of the distance detected by said measurement module.

3. (Original) The display device as claimed in Claim 1, wherein the focusing device comprises an autofocusing unit that alters the refractive index of the lens in response to a change in the distance between the object plane and the support device such that the image plane is maintained coincident with the object plane.

4. (Original) The display device as claimed in Claim 1, wherein the lens is formed, at least partially, of an electro-optical material.

5. (Original) The display device as claimed in Claim 4, wherein the electro-optical material comprises liquid crystal.

6. (Original) The display device as claimed in Claim 1, wherein the control unit for adjusting the refractive index of the lens applies a predetermined electrical voltage to the lens.

7. (Original) The display device as claimed in Claim 1, wherein the superimposing unit comprises a mirror, a splitter mirror or a splitter grating.

8. (Original) The display device as claimed in Claim 1, wherein, when the support device is placed on the head, the measurement module detects the distance between the support device and the object plane by sensing an eye of the viewer.

9. (Currently Amended) The display device as claimed in Claim 1, further comprising a measurement module and wherein, when the support device is placed on the head, the measurement module detects the distance between the object plane and the support device by sensing the object.

10. (Original) The display device as claimed in Claim 1, wherein the image generating device comprises an image module for image generation and a projection beam path from the image module via the focusing unit to the eye of the viewer when the support device is placed on the head, and further comprising a measurement module comprising a sensor and a beam-splitter unit which directs light coming from the object and passing through the lens onto the sensor in the projection beam path between the image module and the lens, the sensor emitting a signal to the control unit as a function of how sharp the image of the object on the sensor is, wherein the image generating device and the measurement module are structured such that, when the object is sharply imaged onto the sensor by adjustment of the refractive index of the lens, the image plane coincides with the object plane.

11. (Currently Amended) A method of generating an image perceivable by a viewer as being superimposed [[on]] in a field of view including an object located in an object plane, the method comprising the steps of:

mounting an image generating device and a superimposing unit on a head wearable support device, the superimposing unit comprising a first beam splitter and a second beam splitter and lacking a retroreflector that receives light that is transmitted through the first or

second beam splitter and reflects it back to the first or second beam splitter through which it was transmitted;

generating an image in an image plane;

focusing the image via a variable refractive index lens; and

adjusting the refractive index of the lens with a control unit such that the image plane coincides with the object plane.

12. (Original) The method as claimed in Claim 11, further comprising the steps of detecting a distance form the object plane to the support device and adjusting the refractive index of the lens as a function of the distance detected.

13. (Original) The method as claimed in Claim 11, further comprising the step of utilizing an autofocus unit to alter the refractive index of the lens in response to a change in the distance between the object plane and the support device to maintain the image plane coincident with the object plane.

14. (Original) The method as claimed in Claim 11, further comprising the step of forming the lens at least in part from an electro-optical material.

15. (Original) The method as claimed in Claim 14, wherein the electro-optical material comprises liquid crystal.

16. (Original) The method as claimed in Claim 11, further comprising the step of applying a predetermined electrical voltage to the lens to alter the refractive index.

17. (Original) The method as claimed in Claim 11, further comprising the step of superimposing the image plane and the object plane utilizing a mirror, a splitter mirror or a splitter grating.

18. (Original) The method as claimed in Claim 11, further comprising the step of detecting the distance between the support device and the object plane by sensing an eye of the viewer.

19. (Original) The method as claimed in Claim 11, further comprising the step of detecting the distance between the support device and the object plane by sensing the object.

20. (Original) The method as claimed in Claim 11, further comprising the steps of:

directing light from the from the object through the lens into a measurement module comprising a beam splitter and a sensor;

directing a portion of the light from the beam splitter onto the sensor;

emitting a signal from the sensor to a control unit as a function of the sharpness of an image formed on the sensor; and

structuring the measurement module such that when the object is sharply imaged on the sensor by adjustment of the refractive index of the lens the image plane coincides with the object plane.

21. (New) A method of generating an image perceivable by a viewer as being superimposed in a field of view including an object located in an object plane, the method comprising the steps of:

mounting an image generating device and a superimposing unit on a head wearable support device, the superimposing unit comprising a first beam splitter and a second beam splitter;

receiving light from the object at an autofocus sensor along a first beam path passing through the first beam splitter;

receiving light from the object at the viewer's eye along a second independent beam path substantially adjacent the first beam path, passing through the second beam splitter;

generating an image in an image plane;

focusing the image via a variable refractive index lens; and

adjusting the refractive index of the lens with a control unit such that the image plane coincides with the object plane.

22. (New) The method as claimed in Claim 21, further comprising the steps of detecting a distance form the object plane to the support device and adjusting the refractive index of the lens as a function of the distance detected.

23. (New) The method as claimed in Claim 21, further comprising the step of utilizing an autofocus unit to alter the refractive index of the lens in response to a change in the distance between the object plane and the support device to maintain the image plane coincident with the object plane.

24. (New) The method as claimed in Claim 21, further comprising the step of forming the lens at least in part from an electro-optical material.

25. (New) The method as claimed in Claim 24, wherein the electro-optical material comprises liquid crystal.

26. (New) The method as claimed in Claim 21, further comprising the step of applying a predetermined electrical voltage to the lens to alter the refractive index.

27. (New) The method as claimed in Claim 21, further comprising the step of superimposing the image plane and the object plane utilizing a mirror, a splitter mirror or a splitter grating.

28. (New) The method as claimed in Claim 11, further comprising the step of detecting the distance between the support device and the object plane by sensing an eye of the viewer.

29. (New) The method as claimed in Claim 21, further comprising the step of detecting the distance between the support device and the object plane by sensing the object.

30. (New) The method as claimed in Claim 21, further comprising the steps of:

directing light from the from the object through the lens into a measurement module comprising a beam splitter and a sensor;

directing a portion of the light from the beam splitter onto the sensor;

emitting a signal from the sensor to a control unit as a function of the sharpness of an image formed on the sensor; and

structuring the measurement module such that when the object is sharply imaged on the sensor by adjustment of the refractive index of the lens the image plane coincides with the object plane.